

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 21 SEP 2005

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Applicant's or agent's file reference 0000054824		FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/EP2004/007872		International filing date (day/month/year) 15.07.2004	Priority date (day/month/year) 26.08.2003	
International Patent Classification (IPC) or national classification and IPC A01N37/22, A01N43/08, A01N43/16, A01N43/32, A01N43/40, A01N43/58, A01N43/74, A01N37/18, A01N37/50, A01N43/54, A01N43/88, A01N43/24, A01N47/24				
Applicant BASF AKTIENGESELLSCHAFT				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 1 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 03.05.2005		Date of completion of this report 20.09.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Romano-Götsch, R Telephone No. +49 89 2399-8874		



**INTERNATIONAL PRELIMINARY REPORT
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International application No.
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Box No. 1 Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

Description, Pages

1-16 as originally filed

Claims, Numbers

2(part), 3-14 as originally filed
1, 2(part) filed with telefax on 12.08.2005

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application,
☒ claims Nos. 1,2,6-11,13,14 (in part) , 3-5 and 12(at all)

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for the said claims Nos. 1-14
- ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
- | | |
|----------------------------|--|
| the written form | <input type="checkbox"/> has not been furnished |
| | <input type="checkbox"/> does not comply with the standard |
| the computer readable form | <input type="checkbox"/> has not been furnished |
| | <input type="checkbox"/> does not comply with the standard |
- ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
- ☐ See separate sheet for further details

**INTERNATIONAL PRELIMINARY REPORT
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Box No. IV Lack of unity of invention

1. ☒ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☒ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1,2,6-11,13,14 (all in part) .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	11,13,14
	No: Claims	1,2,6-9
Inventive step (IS)	Yes: Claims	
	No: Claims	1,2,6-11,13,14
Industrial applicability (IA)	Yes: Claims	1,2,6-11,13,14
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item III.

In reply to an invitation to pay additional search fees as a consequence of lack of unity of invention, the Applicant has selected not to pay. A search report has been established only for the claims corresponding to the first (group of) inventions, namely to a method for treating plants in need of growth promotion, comprising applying to said plants, to the seeds from which they grow or to the locus in which they grow, a non-phytotoxic, effective plant growth promoting amount of an amide compound having formula I in which A is (A1) (parts of claims 1,2,6-11,13-14).

The present opinion is limited to the part of the claims for which a search report has been established (Rule 66.1 (e)PCT)

Re Item IV.

A lack of unity of invention has been already raised during the Search Phase. The Applicant has submitted amended claims 1-14, which, in view of the IPEA still fail to meet the requirements of unity of invention in view of document D2.

D2 discloses a process for regulating the growth of plants using suspoemulsions in diluted form comprising nicotinic acid anilide which fall under the scope of claim 1 (see p.3, line38, p.4, line 14).

It is therefore already taught in D2 that nicotinic anilide with the phenyl ring substituted by a phenyl group in ortho-position, said phenyl group being further substituted by 1 to 3 halogen atoms, are plant growth regulators .

Thus, the initial common general concept of the application, i.e. the provision of a method for treating plants in need of growth promotion with an anilide derivative of formula (I) wherein A is selected from an (optionally substituted) aryl, 5- or 6-membered aromatic or non aromatic heterocycle containing 1 to 3 atoms selected from N, S, O; R1 is hydrogen and R2 is the phenyl of the anilide further substituted in 2-position by a phenyl ring carrying 1 to 5 halogen atoms and or 1 to 3 groups selected from C1-C4 alkyl, C1-C4 haloalkyl, C1-C4 alkoxy, C1-C4 haloalkoxy, C1-C4 alkylthio, C1-C4 haloalkylthio is not novel in view of D2.

The special technical feature of the application which makes a contribution over the prior art is the nature of the substituent A, namely (A1) to (A8) as defined in claim 2.

Since those special technical features are not identical, there are no same or corresponding special technical features shared by the independent claim of the application.

The groups of inventions remains therefore the same as the ones identified by the ISA, namely the following (groups of) inventions 1 to 7, which are not linked to form a single

inventive concept in the meaning of Rules 13.1 and 13.2 PCT:

1- Claims 1,2,6-11,13,14 (all in part)

Method for treating plants in need of growth promotion, comprising applying to said plants, to the seeds from which they grow or to the locus in which they grow, a non-phytotoxic, effective plant growth promoting amount of an amide compound having formula I in which A is (A1).

2- Claims 1, 2, 6-11, 13, 14 (all in part), 3-5, 12 (completely)

Method for treating plants in need of growth promotion, comprising applying to said plants, to the seeds from which they grow or to the locus in which they grow, a non-phytotoxic, effective plant growth promoting amount of an amide compound having formula I in which A is (A2).

3- Claims 1,2,6-11,13,14 (all in part)

Method for treating plants in need of growth promotion, comprising applying to said plants, to the seeds from which they grow or to the locus in which they grow, a non-phytotoxic, effective plant growth promoting amount of an amide compound having formula I in which A is (A4) and (A3) with X being methylene.

4- Claims 1,2,6-11,13,14 (all in part)

Method for treating plants in need of growth promotion, comprising applying to said plants, to the seeds from which they grow or to the locus in which they grow, a non-phytotoxic, effective plant growth promoting amount of an amide compound having formula I in which A is (A3) with X being sulfur, sulfinyl, sulfonyl.

5- Claims 1,2,6-11,13,14 (all in part)

Method for treating plants in need of growth promotion, comprising applying to said plants, to the seeds from which they grow or to the locus in which they grow, a non-phytotoxic, effective plant growth promoting amount of an amide compound having formula I in which A is (A5) and (A6).

6- Claims 1,2,6-11,13,14 (all in part)

Method for treating plants in need of growth promotion, comprising applying to said plants, to the seeds from which they grow or to the locus in which they grow, a non-phytotoxic, effective plant growth promoting amount of an amide compound having formula I in which A is (A7).

7- Claims 1,2,6-11,13,14 (all in part)

Method for treating plants in need of growth promotion, comprising applying to said plants, to the seeds from which they grow or to the locus in which they grow, a non-phytotoxic, effective plant growth promoting amount of an amide compound having formula I in which A is (A8).

Re Item V.

The following documents are referred to in this communication:

- D1 : TAKANE HARA ET AL.: "Flower induction in Asparagus Seedlings by Anilide and Benzamide" J. AGRIC. FOOD CHEM., vol. 40, 1992, pages 1692-1694, XP002305634
- D2 : WO 03/029219 A (MAYER HORST ; JAEGER KARL-FRIEDRICH (DE); BASF AG (DE); ERK PETER (DE)) 10 April 2003 (2003-04-10)

The opinion below is restricted to the 1st group of inventions (Claims 1,2,6-11,13,14 (all in part)) which are directed to a method for treating plants in need of growth promotion, comprising applying to said plants, to the seeds from which they grow or to the locus in which they grow, a non-phytotoxic, effective plant growth promoting amount of an amide compound having formula I in which A is (A1).

NOVELTY

1 INDEPENDENT CLAIM 1

- 1.1 The Applicant has restricted the scope of claim 1 to anilide derivatives wherein the Phenyl ring of the anilide is substituted by a phenyl group in ortho-position, said phenyl group being further substituted by 1 to 5 halogen atoms and or 1 to 3 groups selected from C1-C4 alkyl, C1-C4 haloalkyl, C1-C4 alkoxy, C1-C4 haloalkoxy, C1-C4 alkylthio, C1-C4 haloalkylthio.

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 1 is not novel over D2 in the sense of Article 33(2) PCT.

Document D2 discloses a process for combatting phytopathogenic fungi and insects and/or a process for regulating the growth of plants using suspoemulsions in diluted form comprising the nicotinic anilide of formula (I) p. 1, lines 1-31. These fall under formula (I) of claim 1.

The Applicant's argumentation according to which there is not even the slightest hint in D2 that the nicotinic anilides themselves are capable of regulating growth of plants cannot be followed by the IPEA, in view of D2, p. 1, lines 38-40, p.13, lines 3-7, and claim 14, which depends from claim 10 according to which the nicotinic anilide are the essential ingredients in the composition.

It is also clear from p. 9, lines 1-5, that the activity of the compounds of formula (I) can be further increased by addition of other active ingredients, for example growth regulators. The skilled person reading D2 takes away that suspoemulsions in diluted form containing the anilides described in D2 provide growth regulation, and the spectrum can be broadened even further by addition of other active ingredients.

Document D1 is not considered prejudicial to the novelty of claim 1 anymore.

It describes flower induction and germination obtained by treating seeds of *Asparagus vicinalis* with anilide and benzamide derivatives which differ from the ones on file in that the phenyl group of the anilide is substituted by halogen and not by a phenyl in orto position (see Table I, compounds 25,26 and Table II, compounds 33-37).

1.2 DEPENDENT CLAIMS 2,6-11,13,14

The disclosure of D2 anticipates the novelty of claims 2, 6-9 (Art.33(2) PCT).

2 INVENTIVE STEP

In view of the lack of novelty of independent claim 1 and dependent claims 2, 6-9, an inventive step cannot be acknowledged for said claims (Art. 33(3) PCT).

Dependent claims 11, 13,14, according to which a strobilurin is used in combination with the compounds of formula (I), meet the requirements of the PCT in respect of novelty but are not regarded as inventive in view of D2 (p.11, lines 30-40) according to which the compounds of formula (1) can be combined to strobilurines.

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What is claimed is:

1. A method for treating plants in need of growth promotion, comprising applying to said plants, to the seeds from which they grow or to the locus in which they grow, a non-phytotoxic, effective plant growth promoting amount of an amide compound having the formula I



in which

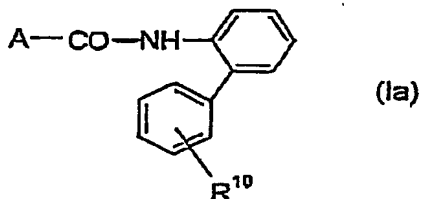
- A is an aryl group or an aromatic or non-aromatic, 5- or 6-membered heterocycle which has from 1 to 3 hetero atoms which are selected from O, N and S; where the aryl group or the heterocycle may or may not have 1, 2 or 3 substituents which are selected, independently of one another, from alkyl, halogen, CHF_2 , CF_3 , alkoxy, haloalkoxy, alkylthio, alkylsulfinyl and alkylsulfonyl;

- R¹ is a hydrogen atom;

- R² is a phenyl group which carries in the 2-position the following substituent:

- phenyl which is substituted by from 1 to 5 halogen atoms and/or from 1 to 3 groups which are selected, independently of one another, from C₁-C₄-alkyl, C₁-C₄-haloalkyl, C₁-C₄-alkoxy, C₁-C₄-haloalkoxy, C₁-C₄-alkylthio and C₁-C₄-haloalkylthio,

2. A method according to claim 1, which comprises an amide compound of the formula Ia below:



in which

A is